Executive Summary
From January 31, 2003, Atrazine IRED

EPA has completed its review of public comments concerning the revised atrazine risk assessments and is issuing its interim risk management decision for atrazine. The revised risk assessments are based on the Agency's review of available data on the currently registered uses of atrazine and public comments received during the reregistration process. The Agency invited stakeholders to provide proposals, ideas or suggestions on appropriate mitigation measures before the Agency issued its risk mitigation decision for atrazine. After considering the risks identified, public comments, and mitigation options proposed by several entities, the Agency developed its interim risk management decision for atrazine. This decision is discussed fully in this document and in a January 31, 2003, Memorandum of Agreement between the Agency and the primary technical registrant, Syngenta Crop Protection, Inc. The Agency expects the atrazine technical registrants to agree to adopt the risk management measures presented in the IRED and in the MOA. Neither the risk assessments nor the interim risk management measures include consideration of cumulative risks posed by all of the triazines and amphibian risk issues.

Atrazine is a triazine herbicide currently registered for use against broadleaf and some grassy weeds. Atrazine is currently registered for use on corn (field and sweet); guavas; macadamia nuts; sorghum; sugarcane; range grasses for the establishment of permanent grass cover on rangelands and pastures under USDA's Conservation Reserve Program (CRP) in OK, NE, TX, and OR; wheat (where application is to wheat stubble on fallow land following wheat harvests; wheat is not the target crop); conifer forests; Christmas tree farms; sod farms; golf courses and residential lawns (Southern turfgrasses). Given the specific nature of the lawn uses, much of atrazine's use on lawns is confined to Florida and the Southeast. Atrazine degrades into hydroxy compounds and chlorotriazine degradates. Atrazine was first registered in 1958 as an herbicide. Use data from 1990 to 1997 indicate that approximately 76.5 million pounds of atrazine active ingredient are used domestically each year.

The Food Quality Protection Act of 1996 (FQPA) requires that, when considering whether to establish, modify, or revoke a tolerance, the Agency consider "available information" concerning the cumulative effects of a particular pesticide's residues and other substances that have a common mechanism of toxicity with other pesticides. The Agency has classified the triazine herbicides (atrazine, simazine, and propazine) and their common chlorinated degradates as having a common mechanism of toxicity. The Agency has not yet completed its cumulative risk assessment for the triazine class, but the cumulative risks of these chemicals will be considered in the future. At that time, the Agency's final tolerance reassessment decision for atrazine and the other triazines will be issued. The Agency may need to pursue further risk mitigation for atrazine to address any risks identified in the cumulative assessment for the triazines.

<u>Overall Risk Summary</u>

The Agency's human health risk and ecological risk assessments for atrazine indicate risks of concern. Intermediate-term (seasonal) dietary risk from drinking water exceeds the Agency's level of concern (>100% cPAD) at the 99.9th exposure percentile for infants, children

1-6 years of age, and adults in 34 community water systems (CWS) primarily in the Midwest. Acute dietary drinking water risks, and acute and chronic dietary food risks (alone) are below the Agency's level of concern for the U.S. population and all population subgroups.

Further, there are some concerns for workers who mix, load and apply atrazine to agricultural and turf sites and for homeowners who apply atrazine products to home lawns. In addition, there are risks of concern for adults and children exposed to atrazine treated lawns after applications.

For ecological effects, the Agency has conducted a screening level assessment for terrestrial impacts and a refined exposure assessment for aquatic impacts of atrazine use. These assessments indicate that atrazine is likely to result in community- and population-level risk at 10 to 20 ppb. The ecological assessment does not address the potential for effects on amphibians endocrinology and reproductive and developmental responses. The Agency will consider amphibian risk after the Agency obtains further data and will address any risks identified in a revision to the IRED to be published by October 31, 2003.

To mitigate risks of concern posed by the uses of atrazine, the Agency considered the mitigation proposal submitted by the technical registrants, as well as comments and mitigation ideas from other interested parties, and has decided on a number of label amendments to address the dietary (drinking water), worker, and residential concerns. In addition, to further address drinking water concerns and to address ecological concerns, the Agency and the technical registrants have agreed to a performance standard for atrazine that must be met in community water systems, prohibition of use in watersheds if the standard is not met, and monitoring data requirements as described in the Memorandum of Agreement. Results of the risk assessments, the necessary label amendments to mitigate those risks, and information on the Agreement between the Agency and the technical registrants are presented in this IRED.

Dietary Risk (Food)

Acute risk estimates for food and drinking water and chronic food risk estimates do not exceed the Agency's level of concern; therefore, mitigation measures are not needed to address acute dietary risks or chronic food risk estimates.

Dietary Risk (Drinking Water)

Intermediate-term (seasonal) drinking water risk estimates do exceed the Agency's level of concern in 34 CWS primarily in the Midwest. The registrant has added three CWS to these 34 to make a total of 37 CWS that are of concern. To mitigate these risks, the Agency has determined that a performance standard that must be met in these CWS and prohibiting use in the watershed if the performance standard is not met is necessary to avoid unreasonable adverse effects. In addition, the Agency is requiring extensive monitoring data on these CWS and other CWS that are in atrazine use areas.

To confirm that risks from atrazine in rural wells is not a concern, the Agency is requiring monitoring data for atrazine levels in rural wells in atrazine use areas.

Residential Risk

Residential and turf use results in risks of concern for children reentering treated atrazine turf and for homeowners applying product to turf using a bellygrinder.

To mitigate these risks, the Agency has determined that the following measures are necessary:

- Restrict the application of granular lawn products when using hand-held devices to spot applications only.
- Prohibit applications of granular lawn products by hand.
- Reduce the maximum 1 time application rate for liquid formulations on lawns and turf to 1 lb ai/A from 2 lb ai/A.
- Require that granular lawn products be watered in.

Occupational Risk

Occupational exposure to atrazine is of concern to the Agency. For agricultural and turf lawn care operator uses of atrazine, several mixer/loader/applicator risk scenarios currently exceed the Agency's level of concern at baseline PPE or label PPE. The Agency has determined that a number of measures are needed to mitigate these risks, as follows:

Agricultural Uses

- Require closed mixing and loading systems for the following scenarios:
  - Mixing and loading liquid formulations for aerial application at a rate greater than 3 lb ai/A
  - Mixing and loading dry flowable formulations for aerial application
- Require maximum PPE (long-sleeved shirt and long pants, shoes socks, and coveralls; gloves; protective eyewear (mixer/loaders) and a dust/mist respirator) for the following formulations:
  - Liquids
  - Dry Flowables
- Require that wettable powders be packaged in water soluble bags for both aerial and groundboom applications.
- Require closed cockpits for aerial applications
- Restrict the impregnation of bulk fertilizer to commercial facilities (prohibit on-farm impregnation)
- Restrict the impregnation of dry bulk fertilizer to 500 tons per day for no more than 30 days per year
- Reduce the maximum application rate for handlers applying liquids with rights-of-way sprayers to 1.0 lb ai/A
- Require closed cabs for flaggers, in accordance with current agricultural practices.

Lawn Care Operators

- Require the use of baseline PPE (long-sleeved shirt and long pants, shoes and socks) for the following formulations:
  - Granulars
- Require the use of baseline PPE plus gloves for the following formulations:
  - Water dispersable granules
  - Water soluble powders
- Require the use of the maximum PPE (long-sleeved shirt and long pants, shoes socks, and coveralls; gloves; and a dust/mist respirator) for the following formulations:
  - Liquids
- Reduce the maximum single application rate for liquid formulations on lawns and turf to 1 lb ai/A from 2 lb ai/A
- Require that granular lawn products be watered in

The Agency does not have risks of concern for workers reentering treated fields; therefore, no mitigation is needed.

Ecological Risk

Ecological risks are also of concern to the Agency. The environmental risk assessment suggests that exposure to atrazine could result in community-level and population-level effects in aquatic communities at concentrations of 10-20 ppb atrazine.

To address these risks, the Agency has determined that an ecological assessment process to identify waterbodies at risk and monitor these waterbodies for atrazine concentrations. In addition, it may be necessary to undertake mitigation in these vulnerable ecosystems. The specifics of this ecological program will be negotiated with the technical registrants and agreed to by April 30, 2003.

The ecological assessment does not address the potential for effects on amphibian endocrinology and reproductive and developmental responses. The Agency will consider amphibian risk after the Agency obtains further data on this issue. Any risks identified will be addressed by the Agency in a revision to the IRED to be published by October 31, 2003.

Conclusions

The Agency is issuing this interim Reregistration Eligibility Decision (IRED) for atrazine, as announced in a Notice of Availability published in the Federal Register. This IRED includes guidance and time frames for implementing label changes for products containing atrazine. Note that the Agency has shortened the time period for implementation of risk mitigation measures outlined in this document and to establish monitoring programs so that the risks identified herein are addressed as quickly as possible. There is a 60-day comment period on this document. With the mitigation measures detailed in this document, the Agency has determined that, until the cumulative risks from all the triazines has been considered, most of the currently registered uses of atrazine may continue. Neither the tolerance reassessment nor the reregistration eligibility decision for atrazine can be considered final until the cumulative risk for all triazines is considered.